REMARKS

The Final Office Action mailed June 22, 2010, considered and rejected claims 1-21. Claims 1, 2, 4-11 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hatano et al., U.S. Publ. No. 2005/0226467 (filed Mar. 5, 2004) (hereinafter Hatano), in view of Wendt et al., U.S. Patent No. 6,895,104 (filed Nov. 16, 2001) (hereinafter Wendt) in view of Thieme et al., U.S. Publ. 2006/0056662 (filed Aug. 20, 2003) (hereinafter Thieme), further in view of Biswas U.S. Patent No. 7,120,280 (filed Sep. 27, 2002) (hereinafter Biswas). Claim 3, 12-19 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hatano in view Wendt, in view of Thieme, in view of Biswas, and further in view of Siegel et al., U.S. Publ. No. 2006/0034492 (filed Oct. 30, 2002) (hereinafter Siegel).[1]

By this response, claims 1 and 12 are amended. Claims 1–21 remain pending. Claims 1, 11, and 12 are independent claims which remain at issue. Support for the amendments may be found, *inter alia*, within Specification ¶¶ 0009, 0015, 0062, 0066, and 0077.[2]

Independent claims 1 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Hatano, in view of Wendt, in view of Thieme, and in view of Biswas. The Applicants respectfully disagree.

In particular, in response to the most recent amendment, the Office asserted that Wendt col. 34 ll. 48–67 "teaches 'iteratively rotating the stored template in predefined increments through a full 360 degree rotation, and computing moments of pixel intensities from the rotated stored template image'" which is recited in each of the independent claims.[3] Wendt col. 34 ll. 48–67 recites:

> "Model comparison can be accomplished by using a series of shift and
> rotate algorithms to adjust at least one image model and then counting the number
> of matching data elements. . . . When shifting and rotating causes the data
> element count to reach or approach a maximum value, the two models are at or

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[1] Office Communication p. 2 et seq. (paper no. 20100521, June 22, 2010). Applicant reserves the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.

[2] Please note that the paragraph numbers are taken from the published application, U.S. Pat. Pub. No. 2005/0227217 (Oct. 13, 2005). It should also be noted that the claims as recited take support from the entire Specification. As such, no particular part of the Specification should be considered separately from the entirety of the Specification.

[3] Office Comm. pp. 3, 6–7.

approaching their maximum comparison point. Using the counts of the matching data elements at or near the maximum comparison point, a score, which represents the relationship or percentage of match, can be calculated.

"The theory behind model comparison 24 is that as one model is rotated and shifted, the number of data element points that match will increase or decrease. If the number of points that match for each angle is plotted, a bell shaped curve will result. The high point for the curve will represent the point at which the two models best compare."[4]

The limitations of the claim explicitly recite that a stored template is prepared by iteratively rotating the stored template in predefined increments through a full 360 degree rotation and computing moments of pixel intensities from the rotated stored template image. Wendt, in contrast does not calculate a moment of a (single) template. Wendt calculates a number by comparing two images. Wendt is clearly "comparing one model to another" by "count[ing] . . . matching data elements" of the two models by rotating "one model."[5] Notably, Wendt fails to teach or suggest that a moment of a stored template (i.e., one model) is calculated *by itself*, without comparison to another image. Wendt calculates a count of *matches between two models* but fails to calculate a *moment for one template, itself*. Accordingly, the Applicants submit that Wendt fails to teach or suggest the limitations which are explicitly recited in the claims.

The noted distinctions notwithstanding, the Applicants have further amended the independent claims to point out certain particular embodiments of the invention.[6] In addition to the distinctions noted in previous responses (with respect to particular limitations), the Applicants submit that the cited references fail to teach or suggest loading a stored template, computing an intensity sum of the stored template, iteratively rotating the stored template in predefined increments through a full 360 degree rotation, and computing moments of pixel intensities of the stored template, itself, from the rotated stored template image by determining a mean and covariance of pixel intensities of the rotated stored template image.

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[4] Wendt col. 34 ll. 48–67.
[5] Wendt col. 34 ll. 43–67.
[6] The Applicants have traversed the rejections of the independent claims and maintain that the claims as previously recited are patentable over the cited references. Accordingly, the amendments are provided to claim particular embodiments but are not offered to overcome any particular rejection. Correspondingly, the Applicants reserve the right to pursue any previously claimed subject matter or appeal any final rejection at such a time as may be considered desirable or appropriate.

Because of at least the distinctions noted, inter alia, the Applicants submit that rejections of claims 1 and 11 under 35 U.S.C. § 103(a) as being unpatentable in view of Hatano, in view of Wendt, in view of Thieme, and in view of Biswas would be improper and should be withdrawn. Accordingly, the Applicants respectfully request favorable reconsideration of independent claims 1 and 11 as presented (as well as the respective dependent claims).

Independent claim 12 rejected under 35 U.S.C. § 103(a) as being unpatentable in view of Hatano, in view of Wendt, in view of Thieme, in view of Biswas, and in view of Siegel.[7] The Applicants respectfully disagree. Notably, claim 12 recites many of the same limitations as the method of claim 1, including the limitations discussed above in reference to claims 1 and 11. Accordingly, the discussion regarding claims 1 and 11, above, apply also to claim 12. Further, the amendments made to claim 1 have also been applied to claim 12.

Therefore, because of at least the distinctions noted, *inter alia*, the Applicants submit that rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable in view of Hatano, in view of Wendt, in view of Thieme, in view of Biswas, and in view of Siegel would be improper and should be withdrawn. Accordingly, the Applicants respectfully request favorable reconsideration of independent claim 12 as presented (as well as the respective dependent claims).

In view of the foregoing, Applicant respectfully submits that other rejections to the claims are now moot and do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicant acquiescing to any of the purported teachings or assertions made in the last action regarding the cited art or the pending application, including any official notice.

For instance, regarding dependent claim 10, the Office asserted that Biswas col. 3 ll. 43–61 "discloses computing the statistical moment of the template data and the input and determining whether the data is within the threshold value."[8] Firstly, the Applicants note that the asserted limitations asserted by the Office are not, in fact, the limitations recited by claim 10. The limitations of claim 10 require computing a statistical moment of the set of template data values, computing a statistical moment of the input data values, and determining whether the statistical moment of the input data values is within a moment threshold percentage of the statistical moment of the set of template data values. The relevant portion of Biswas recites:

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[7] Office Comm. p. 7.
[8] Office Comm. p. 6.

"After the initial smoothing operation is carried out, a binarization step may take place. This operation involves representing the fingerprint as a binary image, consisting of an array of 0 and 1 digits. For example, every pixel of the fingerprint image that depicts a black point, corresponding to a ridge, may be represented by a digit 1. Conversely, every white pixel corresponding to a furrow may be represented by a digit 0. This representation is necessary to allow an electronic process to manipulate the image, and eventually extract the minutiae 20 such as ridge termination 16 and ridge bifurcation 18 shown in FIG. 1. In some cases, the input fingerprint image 10 may contain pixels that are of a color that is not clearly black or white, but rather of a tone of gray. This eventuality may be resolved by specifying a threshold value or value range of the pixels, below which a pixel value of 0 is assigned, and above which a pixel value of 1 is assigned. The threshold value may be a level of gray of the pixel, or a level of whichever property is used to distinguish between furrows and ridges."[9]

It is clear that the cited portion of Biswas (as well as its entirety) fails to teach or suggest computing statistical moments of *both* a set of template values and input data values. Biswas is only interested in determining whether the color of a pixel in a single image (i.e., a fingerprint image) is above or below a particular threshold in order to determine if the particular pixel is associated with a furrow or a ridge of a fingerprint. Biswas does not compute moments for *both* a template and an input image and then determine if the *two (independently computed) moments* are within a threshold percentage of each other. Accordingly, the Applicants respectfully submit that the rejections of claims 10 and 21 are improper and should be withdrawn.

Accordingly, Applicant reserves the right to challenge any of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicant specifically requests that the Examiner provide references supporting the teachings officially noticed, as well as the required motivation or suggestion to combine the relied upon notice with the other art of record.

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to Deposit Account
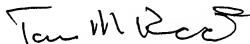
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[9] Biswas col. 3 ll. 43–61.

No. 23-3178: (1) any filing fees required under 37 CFR § 1.16; and/or (2) any patent application and reexamination processing fees under 37 CFR § 1.17; and/or (3) any post issuance fees under 37 CFR § 1.20. In addition, if any additional extension of time is required, which has not otherwise been requested, please consider this a petition therefore and charge any additional fees that may be required to Deposit Account No. 23-3178.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney at (801) 533-9800.

Dated this 17th day of September, 2010.

Respectfully submitted,

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